

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of:

SEA-TAC INTERNATIONAL AIRPORT

)
)
) AGREED ORDER
)
) # 97TC-N122

TO: Port of Seattle
Sea-Tac International Airport
P.O. Box 68727
Seattle, WA 98168-0727

I.

Jurisdiction

This Agreed Order ("Order") is issued pursuant to the authority of RCW 70.105D.050(1).

II.

Findings of Fact

Ecology makes the following Findings of Fact, without admission of such facts by the Port of Seattle.

1. Seattle-Tacoma International Airport (STIA) is a major commercial air facility serving the Pacific Northwest. The Port of Seattle (Port) has owned and operated STIA since it opened in 1944. Airport operations, including passenger terminal operations, baggage and cargo handling, ground transportation, aircraft maintenance, and fueling storage and delivery have been conducted at STIA since its opening within an area of about 1/2 square mile in the southeast quadrant of the airport. This 1/2 square-mile area will subsequently be referred to in this Agreed Order as the "Aircraft Operations and Maintenance Area (AOMA)."

2. Hazardous substances have been released at times within the AOMA during some of these airport operations. By bulk volume, the most abundant contaminant is jet fuel. Other known contaminants include, primarily, gasoline, but also some industrial solvents, mineral spirits, lubricating oil, and aircraft deicing fluids. At this time, thirteen separate areas (sites) within the AOMA are known to have contaminants present in perched ground water and/or significant soil contamination (Appendix 1). Ground water in the Qva aquifer (see Section II.3 below) is also impacted at eight of the thirteen sites. Eight sites are impacted with jet fuel, two sites with gasoline, and three sites are impacted by more than one contaminant. There are also some small areas within the AOMA where the contamination is apparently minor and limited to near-surface soils.

Environmental investigations and/or cleanup actions have been or are currently being conducted independently by STIA tenants and/or the Port in all known contaminated areas. Cleanup actions have been completed at four former sites within the AOMA, and also at some of the areas with minor contamination. Unknown areas of contamination associated with past operations could exist within the AOMA. It is not practicable at this time to conduct a remedial investigation of the entire AOMA in order to identify unknown contaminated areas because: (1) the extensive drilling required would be very difficult given taxiing aircraft, thick concrete in most areas, and the large number of underground utilities, (2) such extensive work over time would represent a significant safety risk to aircraft operations and personnel, (3) extensive drilling could potentially spread contamination, and (4) costs of investigating the 1/2 sq. mile area of the AOMA are not warranted.

3. Zones of perched ground water have been identified at some locations within the AOMA. These zones are small and discontinuous laterally, occur at various depths, and the perched ground water flows in various directions. STIA area perched

groundwater is not a public or private drinking water resource based on current information.

The uppermost aquifer of regional extent beneath the airport is an unconfined aquifer known in the technical literature as the Qva aquifer. The Qva aquifer is not used as a public drinking water supply resource in the general area of STIA. Available information from wells located in the AOMA indicates the Qva aquifer surface is at about 90 ft. below ground surface (bgs) at the north end of the AOMA and about 60 ft. bgs at the south end of the AOMA. Over the same areal extent, the ground surface elevation changes by about 25 ft. At individual sites, the local flow directions of the Qva aquifer are predominantly to the west, that is, from the AOMA towards the interior of the airport (taxiway and runway areas), with northwestward and southwestward flow components at some sites.

4. A project to (1) evaluate ground water flow in the Qva aquifer throughout the AOMA, (2) model contaminant fate and transport, and (3) confirm model results by obtaining and analyzing ground water samples is appropriate because:
 - a) The project results would determine whether or not the Qva aquifer downgradient of the AOMA has been significantly impacted by airport operations within the AOMA during the last 50 years.
 - b) The project results would confirm the predominant flow direction of the Qva aquifer relative to the AOMA and downgradient from the AOMA. If a westward flow direction is confirmed, this would demonstrate that contamination generated within the AOMA would migrate to the interior of the airport property via ground water flow in the Qva aquifer.
 - c) The project results would provide a more comprehensive understanding than is now available of the fate and transport of contamination originating within the AOMA. Project results would identify the potential risk posed by contamination

originating within the AOMA to public drinking water supply wells (specifically the City of Seattle Highline well field north of STIA, the Highline Water District Angle Lake and Des Moines production wells south of STIA, and King County Water District 54 production wells south of STIA); any publicly recorded and operational local private drinking water supply wells; Bow Lake; Des Moines Creek; and Miller Creek. These surface water bodies and drinking water supply wells will hereafter be collectively referred to as "potential local receptors" in this Agreed Order.

- d) The information generated by the project could provide a basis for a consistent approach to cleanup actions within the AOMA.
- 5. The primary cause of soil and ground water contamination at STIA has been leakage from underground storage tanks (USTs) and associated underground piping. UST systems exist at STIA that are critical to airport/aircraft operations. The various UST systems have different regulatory requirements depending on the size and function of the system. Most small UST systems at STIA are fully regulated under Washington UST regulations (WAC 173-360). The airport hydrant fuel distribution systems (hydrant systems) are specifically deferred from leak detection requirements [WAC 173-360-110(3d)] because of the inherent technical difficulties in accurately testing large, high-throughput systems. The UST systems at STIA that store heating fuel are exempt from all UST regulatory requirements except release reporting [WAC 173-360-110 (2h)].

The UST regulations require that fully regulated UST systems must have been either upgraded to meet specific standards or closed by the end of 1998. The fully regulated UST systems at STIA are reported to be either upgraded to 1998 standards or closed. In recent years, owners/operators of the deferred hydrant systems made credible voluntary efforts to address leak detection on those systems. As of autumn 1998,

there is one operational hydrant system remaining at STIA. The four other hydrant systems have now ceased operations and are, or will be, in the process of formal closure as per the UST regulations.

As part of a project concerning ground water quality at STIA, it is appropriate to evaluate the compliance and adequacy of in-place pollution prevention activities, and also consider the feasibility of additional pollution prevention activities regarding all UST systems at STIA.

III.

Ecology Determinations

1. The Port of Seattle is an "owner or operator" as defined at RCW 70.105D.020(12) of a "facility" as defined in RCW 70.105D.020(4).
2. The facility is known as Sea-Tac International Airport and is located within the city of SeaTac, King County, Washington.
3. The substances found at the facility as described above are "hazardous substances" as defined at RCW 70.105D.020(7).
4. Based on the presence of these hazardous substances at the facility and all factors known to the Department, there is a release or threatened release of hazardous substances from the facility, as defined at RCW 70.105D.020(20).
5. By a letter of December 23, 1996, the Port of Seattle voluntarily waived its rights to notice and comment and accepted Ecology's determination that the Port of Seattle is a "potentially liable person" under RCW 70.105D.040.
6. Pursuant to RCW 70.105D.030(1) and 70.105D.050, the Department may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

7. Based on the foregoing facts, Ecology believes the ground water evaluation required by this Order is in the public interest.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that the Port of Seattle take the following actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein. Two distinct types of action will be performed under this Agreed Order: STIA Groundwater Study Tasks (Tasks IV.1 - IV.5) and STIA Fuel Systems Pollution Prevention Tasks (Tasks IV.6 - IV.7).

1. The Port will research existing technical literature, environmental and geological reports, land-use data, airport historical information, and other appropriate documents. The purposes of the research are:
 - a) To provide a background hydrogeological description of the aquifers at the airport and surrounding area, and their relation to the AOMA and potential local receptors.
 - b) To identify (1) known and potential (based on historical operations) areas of soil and ground water contamination within the AOMA and its near-vicinity (defined, for STIA groundwater study tasks, as within approximately 1/4 mile of the AOMA), and (2) potential preferred pathways of contaminant transport.
 - c) To compile a database of wells screened across the surface of the Qva aquifer throughout the AOMA and its near vicinity. The database will include, to the extent information is available, well locations, construction details, ground water elevation data, ground water quality data, and available hydrogeological data and

existing calculations (flow rate and direction, gradient, slug and pump test results, computed hydraulic conductivity, etc.).

- d) To identify any publicly recorded, operational, private drinking water supply wells within one mile of the AOMA that could potentially be impacted by contamination within the AOMA.
2. Ground water elevation data for the Qva aquifer will be acquired from a set of wells representative of the entire AOMA and its near vicinity. The representative set of wells will consist of approximately 10 - 15 wells selected from the well database compiled for Task IV.1(c). The selected wells will be located in the area of the AOMA and its near vicinity. Wells outside the AOMA will be limited to existing wells that are reasonably accessible and in useable condition. The final representative set of wells will be agreed upon by Ecology and the Port. Four quarterly rounds of ground water elevation data will be collected from the set of representative wells. Ground water elevation contours will be determined from each of the quarterly data sets. The data will be reported to Ecology after each quarterly round. If Ecology and the Port agree that additional hydrogeological data are necessary to complete the modeling described in Task IV.3, the Port will conduct the agreed hydrogeological testing on wells selected by Ecology and the Port from the representative set.
3. A ground water flow and contaminant fate and transport model will be developed utilizing appropriate data obtained in Tasks IV.1 and IV.2. The modeling will evaluate the possibility that known and potential (based on historical operations) contamination within the AOMA could impact the potential local receptors. The modeling will utilize standard software and methodology to be selected by agreement of Ecology and the Port.
4. Following the completion of Tasks IV.1, IV.2, and IV.3, Ecology and the Port will evaluate task-generated data and modeling results. Ecology and the Port will agree to

a scope of work for additional investigation activities agreed necessary, based on the results of Tasks IV.1, IV.2, and IV.3. Additional work will be stipulated in an Addendum to this Agreed Order (STIA Ground Water Study, Phase II). Additional activities could include the installation of up to 10 - 15 new wells to be used to confirm modeling results, to conduct additional characterization of ground water and/or to perform long-term monitoring of ground water as appropriate. Model results will be used by Ecology and the Port to jointly determine the need for, and the location of, new ground water monitoring wells to be installed in the Qva aquifer, or other locations, as agreed appropriate.

5. The Port will prepare a report compiling and evaluating data generated from Tasks IV.1, IV.2, IV.3, and IV.4 (STIA Ground Water Study Phase I Report). An approximate schedule of Tasks IV.1 through IV.5 activities (STIA Ground Water Study Tasks) is provided as Appendix 2.
6. Ecology and the Port will work together to assess the fuel storage and distribution systems at STIA and to identify and address appropriate fuel systems pollution prevention activities:
 - a) Ecology and the Port will consult with the owners/operators of the following fuel facilities: pipelines, fuel racks, and UST systems at STIA that are either deferred or exempt from certain provisions of the UST regulations (i.e., heating oil USTs and hydrant systems). Ecology and the Port will develop an understanding of the technical operations of each of these fuel facilities, review in-place leak detection and prevention methods, and identify technically and economically reasonable leak detection and prevention methods which could possibly be employed in addition to, or in lieu of, the methods in place.

Leak detection and prevention methods to be considered for these facilities could include, but would not be limited to: tank tightness testing, pipeline tightness

testing, internal tank inspection, corrosion protection, fuel inventory control procedures, installation of automatic tank gauging equipment, continuous pressure monitoring, best management practices, etc. Ecology and the Port will also work with owners/operators to identify reasonable time periods in which the identified leak detection and prevention methods could be accomplished.

For the purpose of determining that each deferred and exempt fuel facility is operated to reasonably detect and prevent releases to the soil and ground water, Ecology and the Port will request each owner/operator to implement the identified leak detection and prevention methods. Ecology and the Port will maintain regular contact with owners/operators to track progress and to determine whether the requested leak detection and prevention methods are accomplished within the identified time periods.

- b) Ecology will conduct an inspection of UST systems at STIA that are subject to all provisions of the Washington UST regulations (WAC 173-360). Ecology will compile and/or update system information, provide technical assistance concerning compliance with UST requirements, notify owners/operators of violations, and conduct enforcement as appropriate. Ecology will report updated system information and results of inspections to the Port.
- c) The Port will create a database for all UST systems at STIA. The purpose of the database is to enable the Port to track the changes in operations and equipment of the UST systems at STIA brought about by (1) the procedures requested in Task IV.6(a), and/or (2) the procedures and upgrades of equipment required by the UST regulations to meet the 1998 UST standards. The database will include available UST system information such as tank size, age, construction, leak detection methods, corrosion protection, associated piping, etc., for all Port owned and tenant owned/operated UST systems.

- d) For the requirements of this Agreed Order, the Port will annually, for a period of five years beginning no more than 45 days following the execution of this Agreed Order, present to the owners/operators of UST systems at STIA a written request to provide (1) information identifying changes and upgrades made to UST system equipment and operations during the past year; and (2) specific descriptions of methods and procedures used to perform leak detection/prevention during the past year. The Port will update the UST database [Task IV.6(c)] with information provided in response to these requests.
7. The Port will prepare a report presenting the results of Tasks IV.6(a) and (c), (STIA Fuel Systems Pollution Prevention Report), at the conclusion of subtasks (b) and (c). The Port will include a report prepared by Ecology presenting the results of Task IV.6(b) as an Appendix to this report. The Port will also provide annual reports (STIA Fuel Systems Pollution Prevention Followup Reports) presenting the information generated by completion of Task IV.6(d). In addition, the Port will notify Ecology of apparent differences in UST system regulatory requirements and reported system design and/or operation, as well as apparent deviation from the accomplishment of owner/operator agreed leak detection and prevention measures, whenever such apparent differences or deviations become known. An approximate schedule of Tasks IV.6 and IV.7 activities (STIA Fuel Systems Pollution Prevention Tasks) is provided as Appendix 2.

V.

Terms and Conditions of Order

1. Definitions

Unless otherwise specified, the definitions set forth in ch. 70.105D RCW and ch. 173-340 WAC shall control the meanings of the terms used in this Order.

2. Public Notices

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.

3. Remedial Action Costs

The Port shall pay to Ecology costs incurred by Ecology beginning July 1, 1996, pursuant to this Order. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Order preparation, oversight and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Ecology and the Port may enter into an agreement for the prepayment of recoverable MTCA costs related to the Airport. In the event that costs are not covered by a prepayment agreement, the Port shall pay the required amount within 90 days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within 90 days of receipt of the itemized statement of costs will result in interest charges.

4. Designated Project Coordinators

The project coordinator for Ecology is:

Roger Nye
Department of Ecology
Northwest Regional Office
3190 160th Ave. SE
Bellevue, WA 98008-5452

The project coordinator for the Port is:

Paul Agid
Port of Seattle
P.O. Box 68727
Seattle, WA 98168

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and the Port concerning implementation of this Order, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the project coordinator(s). Should Ecology or the Port change project coordinator(s), written notification shall be provided to Ecology or the Port at least ten (10) calendar days prior to the change.

5. Performance

All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. The Port shall notify Ecology as to the identity of such engineer(s) or hydrogeologist(s), and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement in the project. The Port shall provide a copy of this Order to all agents, contractors and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors and subcontractors will be in compliance with this Order.

Except where necessary to abate an emergency situation, the Port shall not perform any remedial actions at STIA, outside that required by this Order, that would foreclose

or preempt remedial actions under discussion or negotiation with Ecology unless Ecology concurs, in writing, with such additional remedial actions.

6. Access

Consistent with applicable safety and security requirements at STIA, Ecology or any Ecology authorized representative shall have the authority to enter and freely move about the project area at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the Port. By signing this Agreed Order, the Port agrees that this Order constitutes reasonable notice of access, and agrees to allow access to the project area at all reasonable times, consistent with applicable safety and security requirements at STIA, for purposes of overseeing work performed under this Order. Ecology shall allow split or replicate samples to be taken by the Port during an inspection unless doing so interferes with Ecology's sampling. The Port shall allow split or replicate samples to be taken by Ecology and shall provide seven (7) days notice before any sampling activity.

7. Public Participation

The Port and Ecology shall prepare a public participation plan for implementation of this Agreed Order. Ecology shall maintain the responsibility for public participation in the project with respect to this Agreed Order. The Port shall help coordinate and implement public participation in the project.

8. Retention of Records

The Port shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of the Port, then the Port agrees to include in their contract with such contractors or agents a record retention requirement meeting the terms of this paragraph.

9. Dispute Resolution

The Port may request Ecology to resolve disputes, which may arise during the implementation of this Order. Such request shall be in writing and directed to the signatory, or his/her successor(s), to this Order. Ecology resolution of the dispute shall be binding and final. The Port is not relieved of any requirement of this Order during the pendency of the dispute and remains responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

10. Reservation of Rights/No Settlement

This Agreed Order is not a settlement under ch. 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority. Ecology will not, however, bring an action against the Port to recover remedial action costs paid to and received by Ecology under this Agreed Order. In addition, Ecology will not take additional enforcement actions against the Port to require those remedial actions required by this Agreed Order, provided the Port complies with this Agreed Order.

Ecology reserves the right, however, to require additional remedial actions during the project should it deem such actions necessary.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the releases or threatened releases of hazardous substances from STIA.

In the event Ecology determines that conditions in the project area are creating or have the potential to create a danger to the health or welfare of the people in the project area or in the surrounding area or to the environment, Ecology may order the Port to stop further implementation of this Order for such period of time as needed to abate the danger.

11. Transference of Property

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of STIA shall be consummated by the Port without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order. Prior to transfer of any legal or equitable interest the Port may have in the project area or any portions thereof, the Port shall ensure that any prospective purchaser, lessee, transferee, assignee, or other successor in such interest shall provide access to Ecology, consistent with applicable health and safety requirements at STIA, to carry out the terms of this Agreed Order. In the event the project area or any portions of the project area are sold to an entity not a party to this order, the Port shall notify Ecology of the contemplated sale at least thirty (30) days prior to finalization of any transfer.

12. Compliance with Other Applicable Laws

- a) All actions carried out by the Port pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in paragraph B of this section.

- b) Pursuant to RCW 70.105D.090(1), no substantive requirements of chapters 70.94, 70.95, 70.105, 75.20, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the remedial action under this Order are known to be applicable at the time of issuance of the Order.

The Port has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event the Port determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify Ecology of this determination. Ecology shall determine whether Ecology or the Port shall be responsible to contact the appropriate state and/or local agencies. Substantive requirements with respect to the City of SeaTac will be determined consistent with the Interlocal Agreement between Port of Seattle and City of SeaTac dated September 4, 1997. If Ecology so requires, the Port shall promptly consult with the appropriate state agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action.

Ecology shall make the final determination on the additional substantive requirements that must be met by the Port under this Order and on how the Port must meet those requirements. Ecology shall inform the Port in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this section.

- c) Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the State to administer any federal law, the exemption shall not apply and PLP shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

VI.

Satisfaction of this Order

The provisions of this Order shall be deemed satisfied upon the Port's receipt of written notification from Ecology that the Port has completed the activities required by this Order, as amended by any modifications, and that all other provisions of this Agreed Order have been complied with.

VII.

Enforcement

- 1) Pursuant to RCW 70.105D.050, this Order may be enforced as follows:
 - a) The Attorney General may bring an action to enforce this Order in a state or federal court.
 - b) The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the project.
 - c) In the event the Port refuses, without sufficient cause, to comply with any term of this Order, the Port will be liable for:
 - 1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

- 2) civil penalties of up to \$25,000 per day for each day it refuses to comply.
- d) This Order is not appealable to the Washington Pollution Control Hearings Board.
- This Order may be reviewed only as provided under Section 6 of ch. 70.105D RCW.

Effective date of this Order: 5/25/99

THE PORT OF SEATTLE

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By M. L. Dinsmore By Stuart M. Shydel



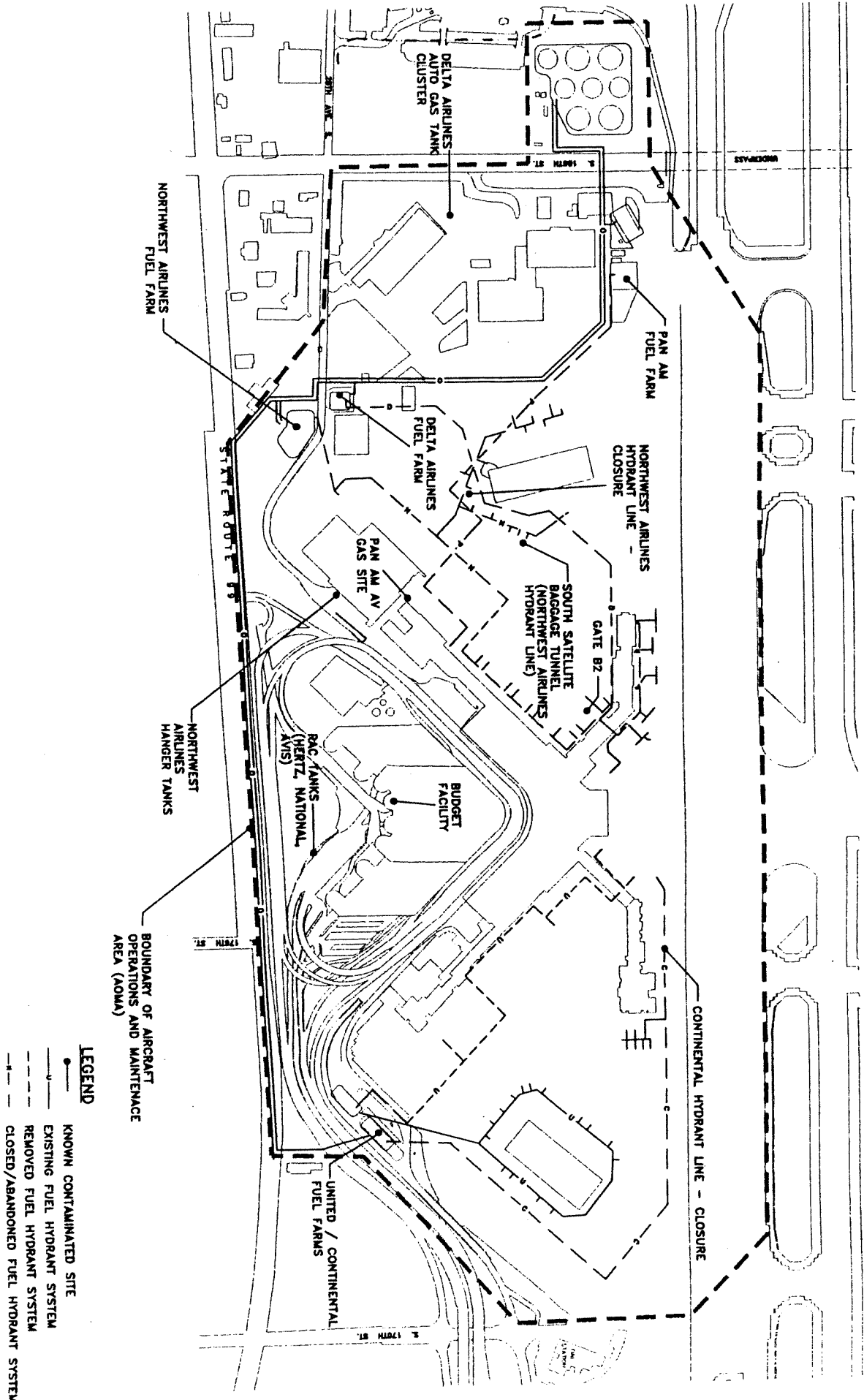
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PROJECT NO. JLS
DATE P.L.B.
DRAWN JLS
CHECKED JLS
APPROVED JLS

PROJECT NO. BV97016
TITLE: AIRCRAFT OPERATIONS & MAINTENANCE AREA (AOMA) STA GROUND WATER STUDY APPENDIX 1, PAGE 1



Appendix 1 – page 2

Sites within the AOMA that are known to have contaminants present in groundwater and/or significant soil contamination: (1)

Site	Perched Groundwater	Qva Aquifer	Jet A Only	Gasoline Only	Mixed Contaminants
United Airlines Fuel Farm/ Continental Airlines Fuel Farm	*		*		
Continental Airlines Hydrant System Closure			*		
Northwest Airlines Fuel Farm	*	*(2)	*		
Northwest Airlines Hydrant System Closure		*	*		
Northwest Airlines Hangar Tanks	*	*			*
South Satellite Baggage Tunnel (NW Airlines Hydrant Line)		*	*		
Gate B2		*			*
Delta Airlines Fuel Farm	*		*		
Delta Airlines Auto-Gas Cluster Tanks	*				*
Pan American Airlines Fuel Farm (3)			*		
Pan American Airlines Avgas Tanks	*	*	*		
Budget Auto Facility		*		*	
RAC Auto Facility (Hertz/National/Avis)		*		*	

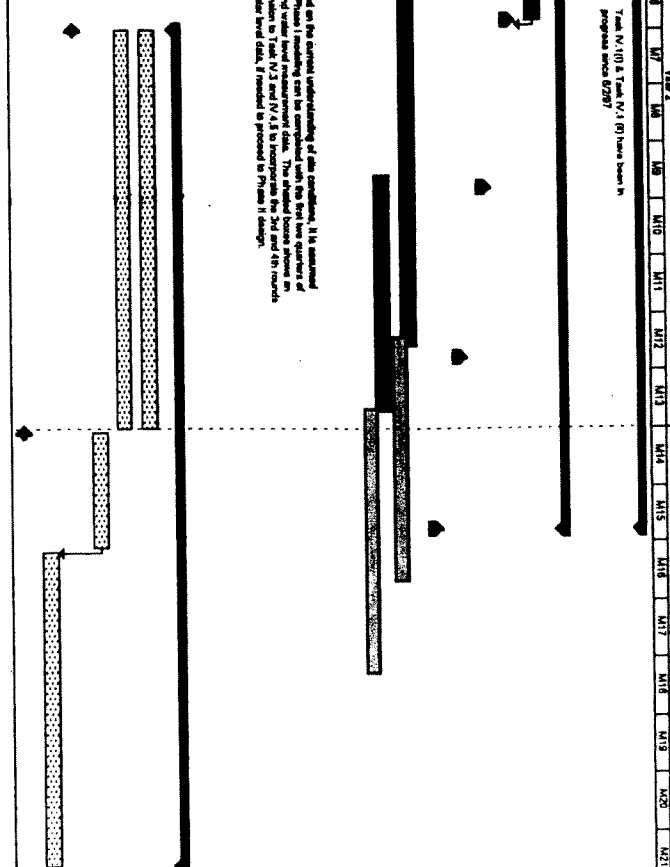
(1) Current as of January 1999

(2) TPH-Jet A levels in two wells slightly in excess of Method A in some sampling rounds during 1996 & 1997. All TPH-Jet A levels below Method A prior years and 1998.

(3) No further cleanup actions at this time. Contaminated soil remains next to active jet fuel lines.

Task Name	Start	Finish	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21
GROUND WATER TASKS																							
Task N.10: Review Existing Geologic and Hydrogeologic Data	Fri 6/1/90	Wed 2/22/90																					
Task N.10B: Complete Data into Database	Fri 6/1/90	Thu 6/14/90																					
Task N.2: Subcontractor Studies of Existing Wells in the Dry Angles	Thu 6/15/90	Wed 2/22/90																					
Identify Existing Monitoring Wells & Conduct Focused Field Work	Thu 6/15/90	Wed 2/22/90																					
1st Round of Quarterly Ground Water Level Measurements	Thu 6/27/90	Thu 5/27/90																					
2nd Round of Quarterly Ground Water Level Measurements	Wed 6/28/90	Wed 6/28/90																					
3rd Round of Quarterly Ground Water Level Measurements	Wed 1/24/90	Wed 1/24/90																					
4th Round of Quarterly Ground Water Level Measurements	Wed 2/28/90	Wed 2/28/90																					
Task N.3: Develop and Implement Ground Water Model	Thu 6/15/90	Wed 1/17/90																					
Task N.4.5: Phase I Data Analysis and Report	Wed 6/15/90	Wed 1/22/90																					
FUEL SYSTEM POLLUTION PREVENTION TASKS																							
Task N.4.6: Pollution Prevention Observations with owners of Odebrecht/Amplify UST System	Thu 6/1/90	Fri 6/1/90																					
Task N.4.6B: Conduct UST System Inspections	Thu 6/1/90	Fri 1/21/90																					
Task N.4.6C: Complete Data into Task Data Base	Mon 1/26/90	Fri 2/2/90																					
Task N.4.6D: Submission Request and Data Base Update (Update Assembly Item 6/1/93)	Mon 6/1/90	Thu 6/1/90																					
Task N.7.6: Fuel System Pollution Prevention Report	Mon 3/26/90	Fri 6/1/90																					
Task N.7.6B: Fuel System Pollution Prevention Follow-up Reports (Annual Reports Item 1/1/94)	Mon 1/26/90	Mon 1/26/90																					

Based on the current understanding of the conditions, it is assumed that Phase I monitoring can be completed with the first two quarters of ground water level data. The schedule for the first two quarters of ground water level data is shown in the table below. The first and fifth months of water level data, if needed to proceed to Phase II design.



***Sea-Tac Airport
Ground Water Study***

Public Participation Plan

Prepared By:

The Washington Department of Ecology
The Port of Seattle

May 1999

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1.0 Introduction

Overview

The Washington State Department of Ecology (Ecology) and the Port of Seattle (the Port), operator of Sea-Tac International Airport, are prepared to enter into a voluntary Agreed Order under the Model Toxics Control Act (MTCA, Washington's hazardous waste cleanup law). The Agreed Order is a formal legal agreement which, in this case, calls for the Port to perform two main tasks at the Airport:

- ◆ A comprehensive ground water study
- ◆ Pollution prevention activities for Airport fuel systems

Over the years, jet fuel and other petroleum products have been released to the environment at Seattle-Tacoma International Airport. These substances were released in the Aircraft Operations and Maintenance Area (AOMA, see map in Appendix A) primarily from underground storage tanks, fuel distribution piping systems and, to a lesser degree, due to aircraft maintenance activities. As a result of these historic releases, the soil and ground water beneath some portions of the AOMA are now contaminated.

Thirteen separate areas within the 1/2-square-mile (320 acres) AOMA are currently known to have ground water and/or significant soil contamination. The primary contaminant in these areas is jet fuel. Other contaminants, such as gasoline, industrial solvents, mineral spirits, lubricating oil and aircraft deicing fluids, have also been found, but in much smaller amounts. The jet fuel and other substances released at the Airport are considered hazardous substances under Washington's hazardous waste cleanup law, the Model Toxics Control Act (MTCA, chapter 70.105D, Revised Code of Washington). Environmental studies and/or cleanup activities are underway or are complete at all known contaminated areas at the Airport.

Much is already known about the ground water and the contamination beneath the AOMA. The known contamination appears to be localized and does not appear to threaten public water supplies or area surface water bodies. However, in order to confirm that the contamination is not a threat, now or in the future, a more comprehensive understanding of the ground water beneath the Airport is appropriate.

Ground Water Study

The ground water study will be conducted in two phases. The first phase will include developing a computer model of ground water flow throughout the Airport and additional modeling focused on the movement of the ground water and the contamination beneath the AOMA. The computer modeling will help identify the potential risk of the

contamination in ground water reaching public and private drinking water supply wells and nearby surface water bodies: Bow Lake, Des Moines Creek, and Miller Creek.

The second phase of the study will be described in an addendum to the Agreed Order and will include work needed to complete additional investigation activities. These Phase II activities will include drilling additional groundwater monitoring wells that could be used to verify Phase I results and to perform additional groundwater monitoring and/or investigation work.

The findings from the ground water study will be published in a report. Information from the study may be used by the parties conducting cleanups at the Airport and could provide a basis for a consistent approach to cleanup actions within the AOMA.

The ground water study is one condition the Port must meet to maintain state environmental certification of the Airport expansion project.

Pollution Prevention

The pollution prevention activities outlined in the Agreed Order are intended to enhance current pollution prevention practices at Airport underground storage tank and pipeline facilities by using a strategy of evaluating, implementing and monitoring measures that could be taken to prevent future releases of contamination to soil and ground water. These activities will be conducted by both Ecology and the Port.

The actions outlined in the Agreed Order include:

- ◆ Working with the owners and operators of Airport fueling facilities to improve leak detection and leak prevention measures. Such measures could include: tank tightness testing, pipeline tightness testing, internal tank inspection, corrosion protection, fuel inventory control procedures, installation of automatic tank gauging equipment, continuous pressure monitoring and best management practices.
- ◆ Inspecting all underground storage tank (UST) systems at the Airport for compliance with Washington's Underground Storage Tank Regulations.
- ◆ Creating a database of all UST systems at the Airport. This database will be updated annually using information provided by owners and operators of Airport fueling facilities.
- ◆ Annual reporting to Ecology on the status of all UST systems at the Airport.

The Model Toxics Control Act and Public Participation Commitment

MTCA places significant emphasis on public participation throughout the formal cleanup process. Neighboring residents, businesses and other interested parties are given the opportunity to become involved in cleanup decisions. The regulation requires "the early planning and development of a site specific public participation plan." The plan includes publishing public notices announcing the availability of reports and studies for the site, conducting public comment periods and may also include holding public meetings and hearings. Besides these basic public participation requirements, the law calls for flexibility and creativity in tailoring additional activities appropriate to each affected community. Such activities may include interviews with community members, public workshops and working with existing community groups to "get the word out."

Washington Administrative Code (WAC) section 173-340-600 includes the public participation provisions for MTCA. In addition, WAC 173-340-530 (6) includes a provision for appropriate public participation opportunities when an Agreed Order is in place.

This plan describes public participation activities for the Agreed Order for ground water evaluation and pollution prevention activities at the Seattle-Tacoma International Airport.

This plan includes required public participation activities specified in WAC section 173-340-600 as well as additional activities intended to encourage informed citizen participation in the Agreed Order.

Participants in this Plan

The Port has been identified by Ecology as the potentially liable person (PLP) for the groundwater study. The Port and Ecology are entering a legal agreement called an Agreed Order which outlines the work required of the Port and describes how Ecology and the Port will work together. Ecology's role is to oversee the Port's work to ensure that the requirements of the Agreed Order and the Model Toxics Control Act are met and to ensure that the public participation activities detailed in this plan are carried out. The Port's role is to carry out the tasks specified in the Agreed Order and to assist as needed in public participation activities.

Ecology and the Port have agreed to work in an open, cooperative and coordinated fashion on public participation activities. Each participant shares a common goal of fostering a well-informed public with a clear understanding of the ground water study and its relationship to other activities at the Airport.

Goal of this Public Participation Plan

MTCA states that public participation plans are intended to encourage a coordinated and effective public involvement tailored to the public's needs at a particular facility.

In addition to this, a primary goal of this plan is to promote public understanding of the Agreed Order and ground water study and pollution prevention activities at the Airport so that the public can provide meaningful comments on the project.

Some objectives of this plan are:

- ◆ To identify people and organizations with an interest or potential interest in the ground water study and pollution prevention processes and findings.
- ◆ To identify community concerns related to the ground water study and ways to address those concerns.
- ◆ To design and conduct public involvement activities that are appropriate and meaningful to the local and surrounding communities.
- ◆ To promote public understanding of the Agreed Order and ground water study process and findings.
- ◆ To aid communication and to encourage interaction and collaboration among Ecology, the Port and the community.
- ◆ To meet the Model Toxics Control Act public participation requirements [WACs 173-340-530 (6) and 173-340-600].

2.0 The Public Participation Process at Seattle-Tacoma International Airport

MTCA calls for public participation at important milestones in the investigation and cleanup process. The public must be provided an opportunity to comment before Ecology can give final approval for most key decisions. For this project, formal public notice and a comment period have been conducted for the scope of work for the ground water study and pollution prevention actions in the Agreed Order. Additional public notice and another comment period will be conducted for the report containing the results of the study and for any additional activities that result from the study.

This Public Participation Plan describes only the activities planned and required for the phased scope of work described in the Agreed Order and the final ground water study

report. Public participation activities for any additional phases will be identified later through an amendment to this Plan or through the development of a new Plan.

Roles and Responsibilities

In accordance with MTCA requirements, Ecology retains overall responsibility and approval authority for public participation activities for this project. Ecology, with assistance from the Port, will conduct activities related to formal public notice and comment periods, including soliciting, receiving and considering comments, making final decisions, and preparing responsiveness summaries. The Port, with Ecology's review and approval, may elect to conduct additional, informal activities such as placing project updates in existing Airport newsletters or in surrounding cities' newsletters.

All public participation activities relating to the ground water study and pollution prevention activities must be coordinated through Ecology. Both Ecology and the Port will allow each other adequate advance review time for any materials to be circulated related to this project and will notify each other in advance of any planned public appearances related to this project and immediately following any media contacts related to this project.

Points of Contact

The following people will be the primary points of contact for the general public and media and for coordinating project-related public participation activities:

Ecology:

Christine Corrigan
Public Involvement
Toxics Cleanup Program
Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452
(425) 649-7254

Port of Seattle:

Rachel Garson
Community Relations Manager
Public Affairs
Seattle Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168
(206) 248-6851

Required Activities

The required public participation activities for this project are as follows. Ecology is the lead for these activities; the Port will assist as needed:

1. A 30-day public comment period for the Agreed Order was held from May 14 to June 13, 1997. A second 30-day public comment period will occur after the report on the results of Phase I activities and the Addendum to the Agreed Order describing proposed Phase II activities are complete.

2. Formal **public notice** for the comment periods will include the following:

- a) A mailed **fact sheet** summarizing the Agreed Order and related activities and inviting the public to comment. This fact sheet will be mailed to individuals on a mailing list developed jointly by Ecology and the Port (see description below). This list will include, but will not be limited to the "potentially affected vicinity" including adjacent property owners as well as individuals that request to be placed on the list. As of the printing of this plan, the mailing list includes more than 17,000 people.
- b) **Display advertisements** announcing the comment period will be placed in the following newspapers: *The Seattle Times South Edition*, the *Highline News* and the *South County Journal*.
- c) A **notice** will be published in Ecology's Site Register.

Supporting tasks related to the above-required activities include:

Mailing List

Ecology and the Port will work together to compile and maintain a comprehensive mailing list for the project. The list will include at a minimum, adjacent property owners, individuals, groups, public agencies, elected officials and private firms with a known interest in the airport, appropriate media, as well as anyone who requests to receive project-related mailings. The list will be maintained by the Port with a current copy provided to Ecology as requested. This list will be updated as needed by the Port with Ecology's assistance.

Public Meetings and Workshops

A public meeting was held on May 21, 1997, from 6:30 to 9:00 p.m. at the Burien Library to answer questions and receive oral comments on the Agreed Order.

In addition, Ecology and the Port will conduct a public meeting/workshop after the report on the results of Phase I activities and the Addendum to the Agreed Order describing proposed Phase II activities are complete.

For public meetings during comment periods, Ecology will schedule an appropriate time and secure a meeting place. Ecology will provide public notice of the meeting and provide a record or transcript of the formal comments made at required meetings/hearings. Ecology will provide the record or transcripts to the Port. If necessary, the Port will cooperate with Ecology and assist by providing descriptive materials and personnel as needed for required public meetings. When such assistance is needed, Ecology will give the Port advance notice in order to schedule and prepare

for the meeting. For other meetings that are not required under MTCA, the Port, with Ecology oversight and approval, will take the lead in planning and coordinating meeting logistics.

Information Repositories

Information repositories will be established for the public to access documents pertaining to project activities. Information placed at the repositories will include all project-related documents requiring a comment period (the Agreed Order, for example) and any background information that may be relevant or necessary to adequately review such documents. Other information may include validated laboratory results, status reports, interim reports, fact sheets and newsletters. The following are the repositories for the Sea-Tac Airport groundwater study project:

Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452
Attn: Sally Perkins
(425) 649-7190

Sea-Tac Airport
3rd Floor, Room 301

Burien Library
14700 6th Southwest
Burien, WA

Des Moines Library
21620 11th South
Des Moines, WA

Valley View Library
17850 Military Road South
SeaTac, WA

Responsiveness Summaries

Comments received during the public comment periods will be retained in the Sea-Tac Airport files at Ecology with copies provided to the Port. Responses to comments received during the public comment periods will be compiled in a responsiveness summary prepared by Ecology. A draft responsiveness summary will be provided to the Port for review and comment. Ecology may modify the responsiveness summary based on the Port's comments. The final responsiveness summary will be sent to those who submitted written and/or oral comments and to the information repositories. Notice of the availability of the summary will be printed in Ecology's Site Register.

Additional Activities

Ecology or the Port may elect to undertake additional activities not required by MTCA for this project if deemed appropriate and agreed to by all parties.

The following are additional activities that are currently scheduled for this project:

- Project updates will be published in Sea-Tac Forum, the Airport's newsletter.
- At least one workshop/open house will be held at the conclusion of Phase II activities of the ground water study.
- Informal briefings about the ground water study will be made to local area municipalities upon request.
- Ecology will provide notice of the public comment period and any project related public meetings, hearings, open houses or workshops on Ecology's Toxics Cleanup Program homepage on the Internet. In addition, when possible, documents relating to the project will be made available on the Toxics Cleanup Program's homepage.

The following activities may be undertaken by either Ecology or the Port at appropriate points during the course of the project:

- **Media releases** may be issued to the local newspapers, radio, and TV stations.
- **Public notices** may be posted at the information repositories, in the vicinity of the airport, or any other location appropriate to the interests and needs of the citizens in the airport area.

All additional public participation activities beyond those required by MTCA must be coordinated with the required public notice activities. This means that any party choosing to undertake such activities will notify the other parties in advance and will provide an opportunity to review and comment on any materials before they are made public. Ecology maintains review and approval authority over all additional public involvement activities.

Ecology and the Port will each maintain regular contact with interested community groups and individuals and agree to share information gained from these contacts with each other.

Updates to the Public Participation Plan

This plan will be updated when and if additional phases of the project take place as formal actions.

3.0 Community Profile

Community Background

Sea-Tac Airport, operated by the Port of Seattle, is the international air transportation hub of Washington State and the northwestern area of the United States and serves as the primary commercial airport for the Pacific Northwest. In 1996, 24.6 million passengers used Sea-Tac and 388,000 metric tons of cargo was shipped through Sea-Tac. There are about 1,200 flights per day in and out of Sea-Tac.

The Airport handles about \$5 billion in two-way trade each year. The Port facility, its airline tenants and concessionaires employ 17,000 people at the Airport and indirectly about 20,000 more off-site at Airport-related businesses such as hotels and car rental companies. It also supports the state's growing tourism business.

Sea-Tac Airport is located entirely inside the city limits of SeaTac. The Airport encompasses over 2,500 acres. Other cities adjacent to the City of SeaTac are Des Moines, Tukwila, Burien and some parts of unincorporated King County.

The areas built up in this area are just under 50% residential, 17% open space or agricultural, 12.6% commercial or industrial, 11% airports (Sea-Tac and Boeing Field) and 10% other uses.

Community Concerns

The Port of Seattle has a long history of working and communicating with surrounding communities on issues related to Airport operations. Through these continuing relationships with the local communities, the Port has a good understanding of community concerns and issues.

The communities surrounding the airport have had long-standing concerns about aircraft noise, air pollution, contamination of groundwater and streams near the airport, and other issues related to airport operations and construction. The primary current issue of interest in the community is the proposed expansion of the Airport, specifically the addition of a third runway. There are a wide variety of concerns about the third runway, some of which are related to perceived environmental impacts. The residents in the immediate areas around the Airport receive the greatest impacts from the airport.

There has been particular concern expressed about Airport surface water management. Several legal actions have been filed against the Port on water drainage issues and either have been settled or are awaiting disposition.

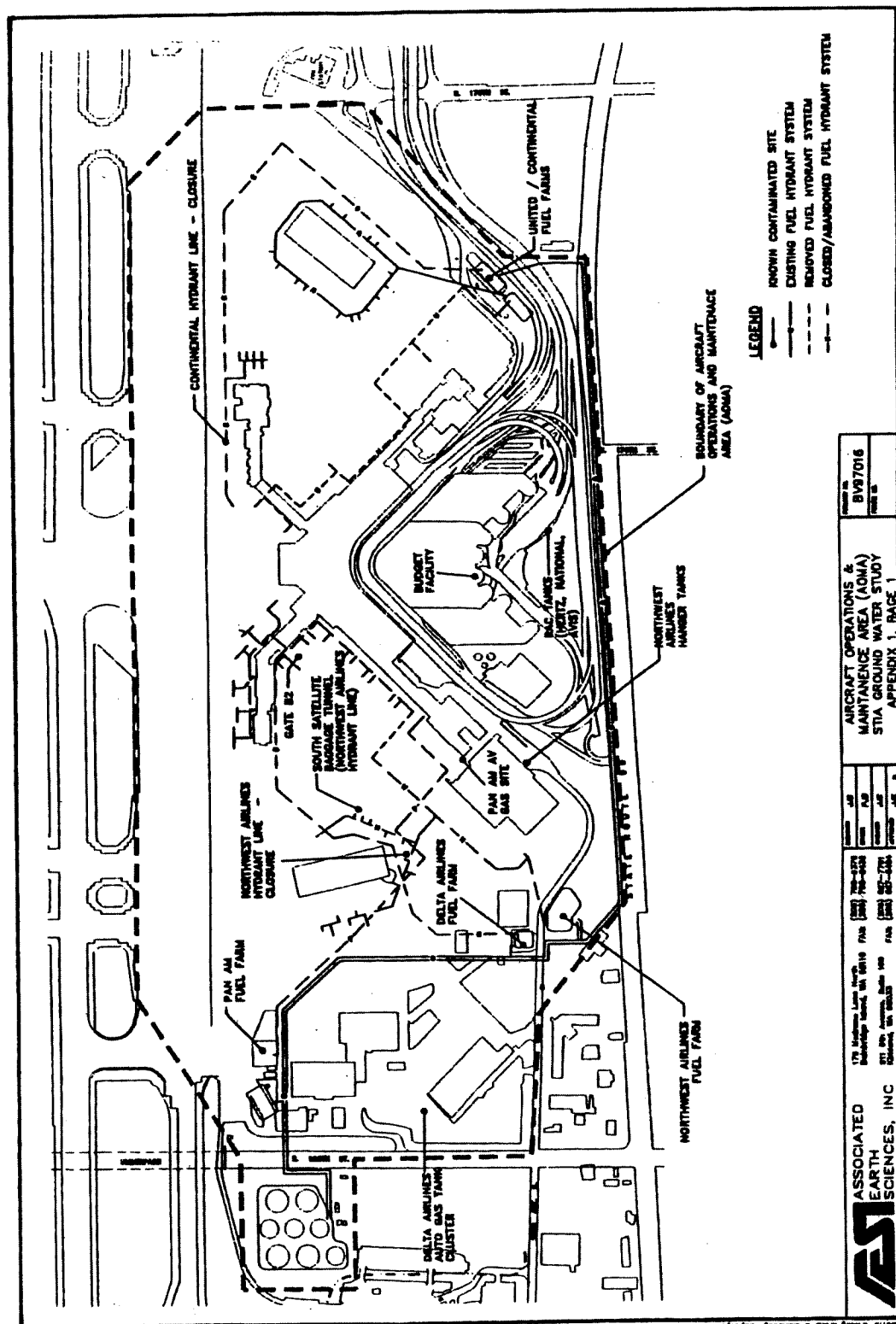
Concerns about ground water have been voiced, especially as they relate to the potential for contamination to impact drinking water. Data now available indicate that such a potential is small. The ground water study is being conducted to increase the level of certainty about these concerns.

During community interviews, a number of people (more than 10) indicated an interest in learning about how the Agreed Order and ground water study will impact decisions related to the National Pollutant Discharge Elimination System permitting process.

The cities around the Airport have expressed concern about Airport growth and its impacts and have formed a coalition, called the Airport Communities Coalition (ACC) to oppose the third runway. The coalition includes Burien, Des Moines, Tukwila, Normandy Park, Federal Way, and the Highline School District. The ACC filed suit against the Port of Seattle and the Puget Sound Regional Council after each approved in 1996 the addition of a third runway at Sea-Tac. The suit contends that the environmental impact statement for the Airport Master Plan that includes the new runway is inadequate. The ACC also alleges that the Port and the Puget Sound Regional Council violated the state's Growth Management Act when they approved the new runway.

In addition to ACC, the formal coalition of cities against the third runway, there are several grass roots groups that oppose expansion of the Airport and also work on environmental issues related to airport operations.

Map of the AOMA



Appendix B

Community Groups

Airport Communities Coalition (ACC)
City of Des Moines
21630 11th Avenue South
Des Moines, WA 98198

**Regional Commission on Airport Affairs
(RCAA)**
19900 4th Avenue Southwest
Normandy Park, WA 98166

Citizens Against Sea-Tac Expansion (CASE)
31500 1st Avenue South #14-103
Federal Way, WA 98003